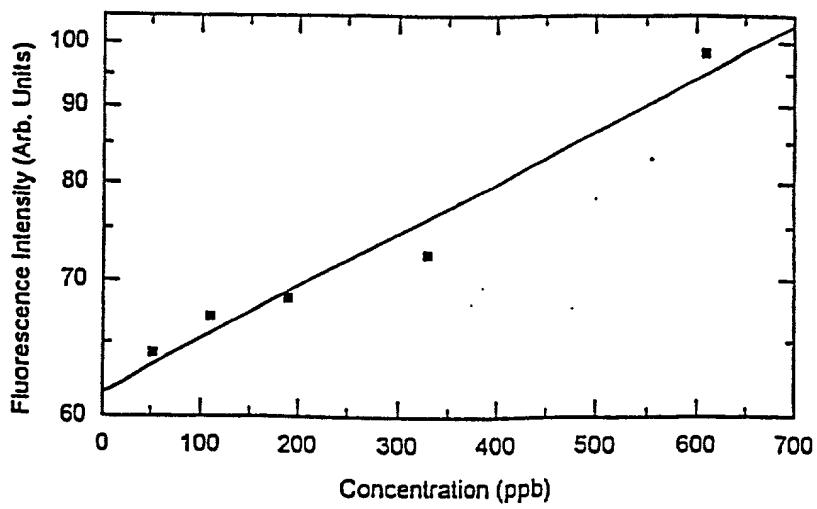


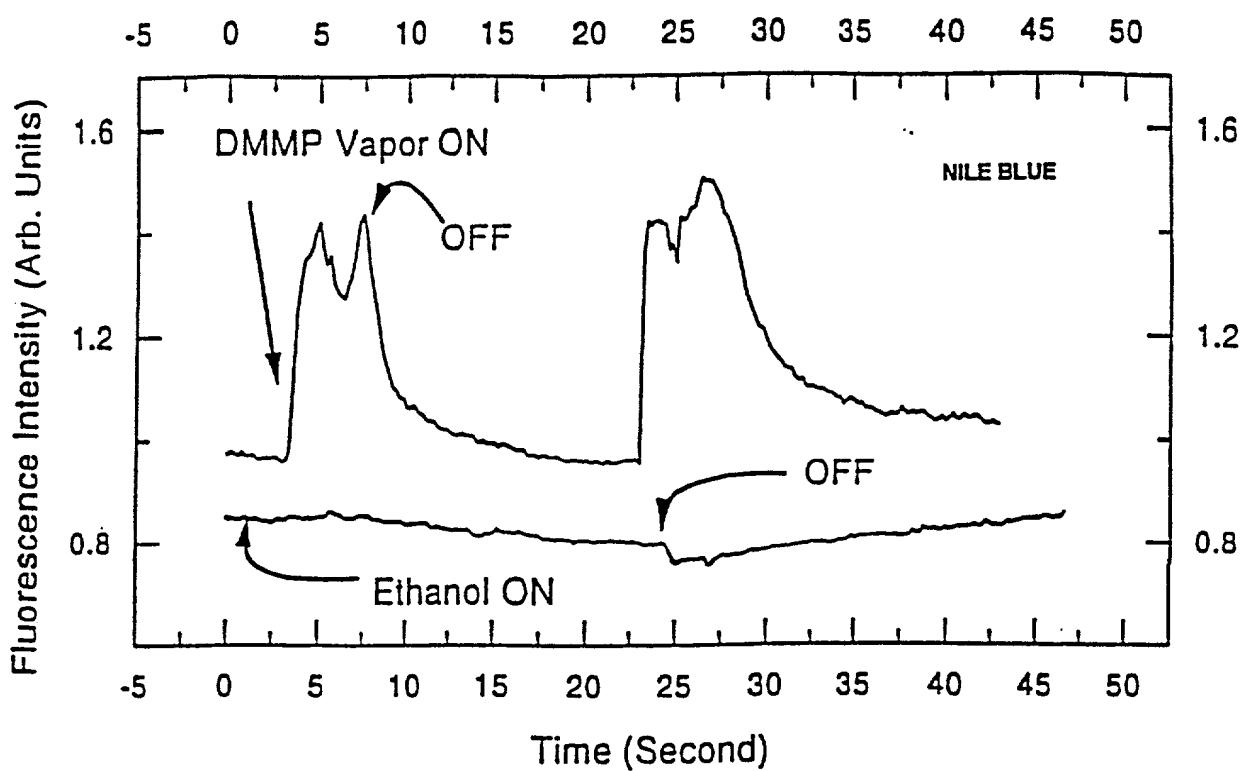
Emission Spectra of Nafion® Thin Film Containing DilC(5) Before and After Exposure to DMMP Vapor

FIG. 1



Sensitivity and Proportionality of Nafion®/ DilC(5) Probe to DMMP

FIG. 2



Response of Nile Red and Nile Blue Doped Polyethylene Maleate Films to DMMP

FIG. 3

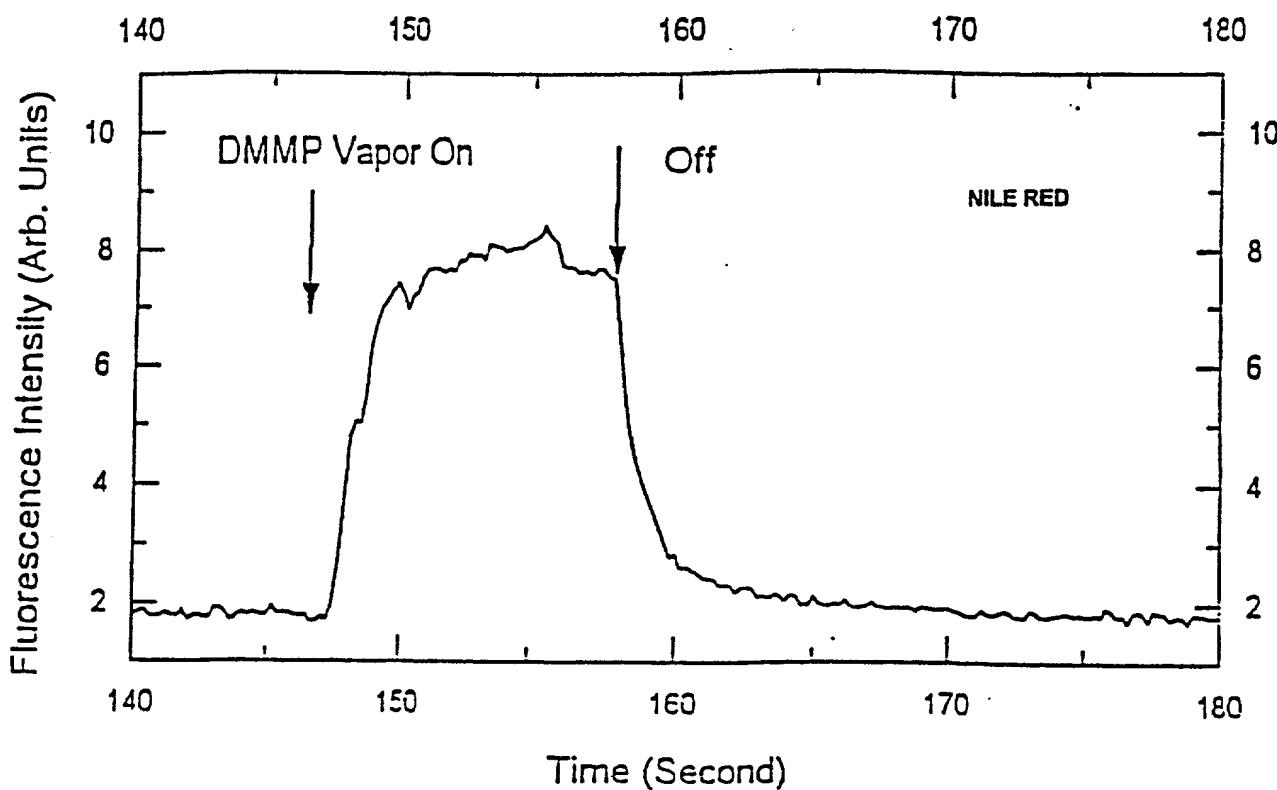


FIG. 4

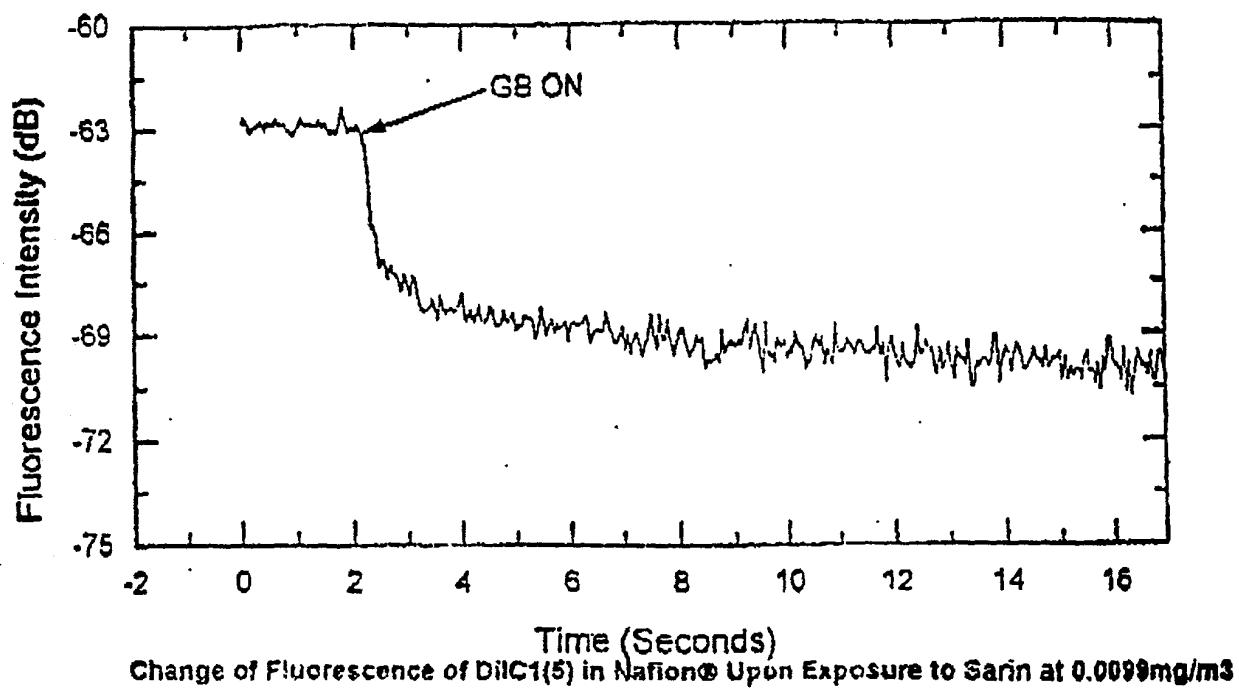
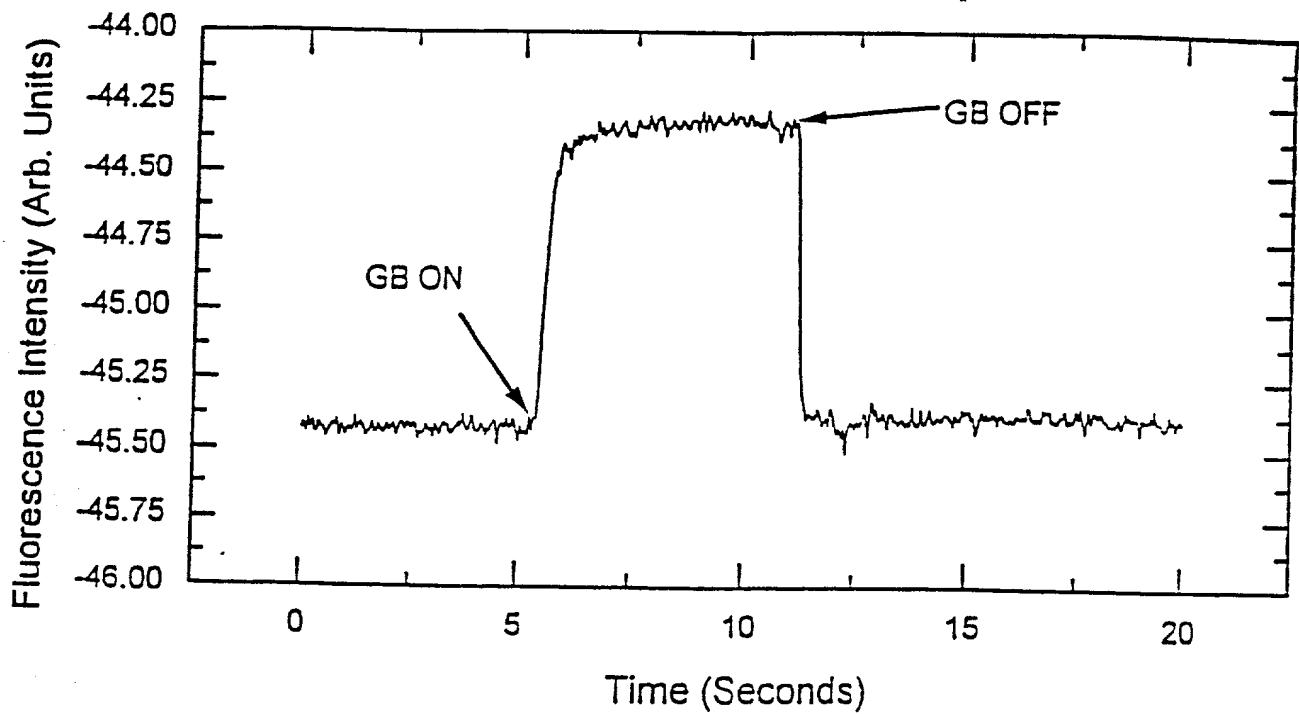
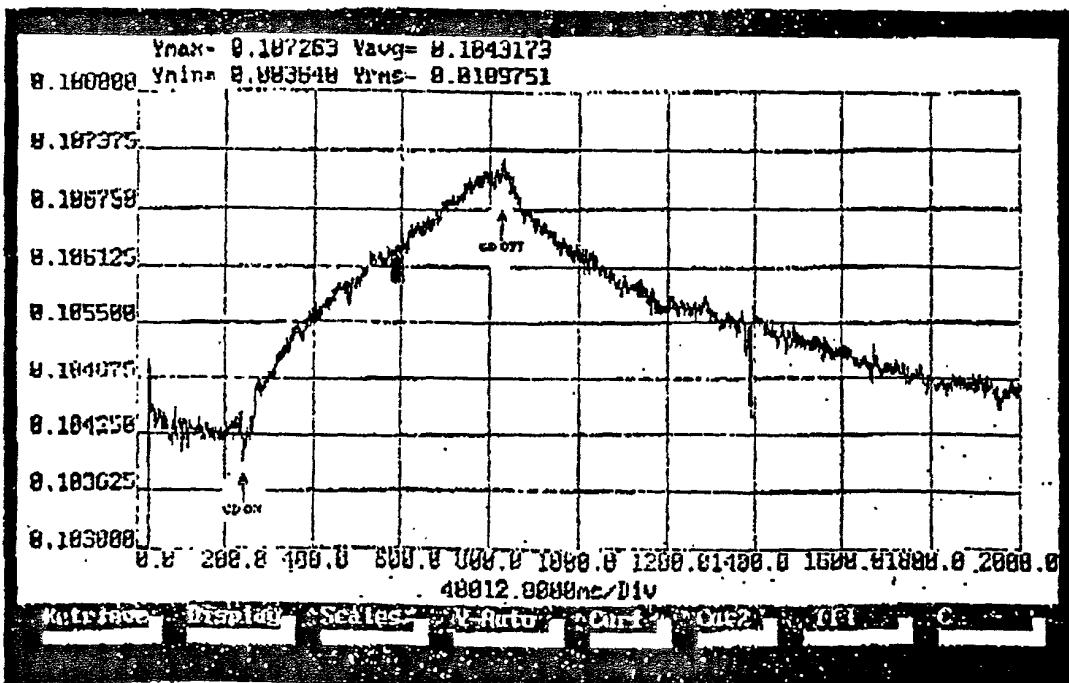


FIG. 5



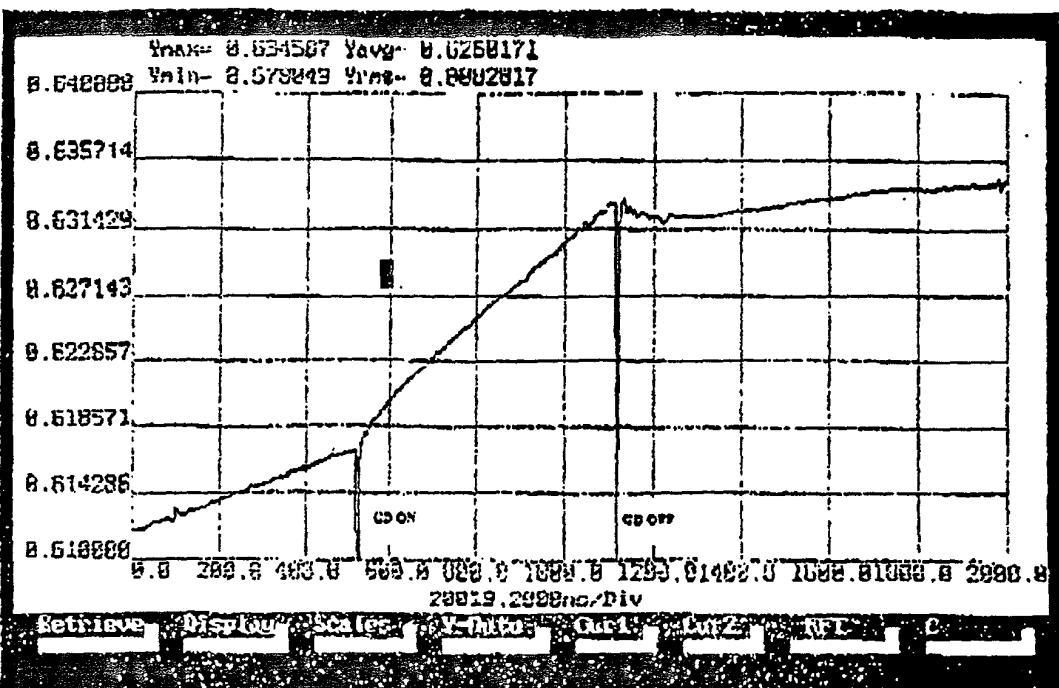
Change of Fluorescence Intensity when the Film was Exposed to Sarin.

FIG. 6



Response of an Oxazine 170/Fluoropolyol Film to GD at 520 ppb

FIG. 7



Response of an Oxazine 170/Fluoropolyol Film to GD at 41 ppb

FIG. 8

FIG. 9 A

Response of Nile
Blue/PECH film to HD at
350 ppb on 27 Feb 97

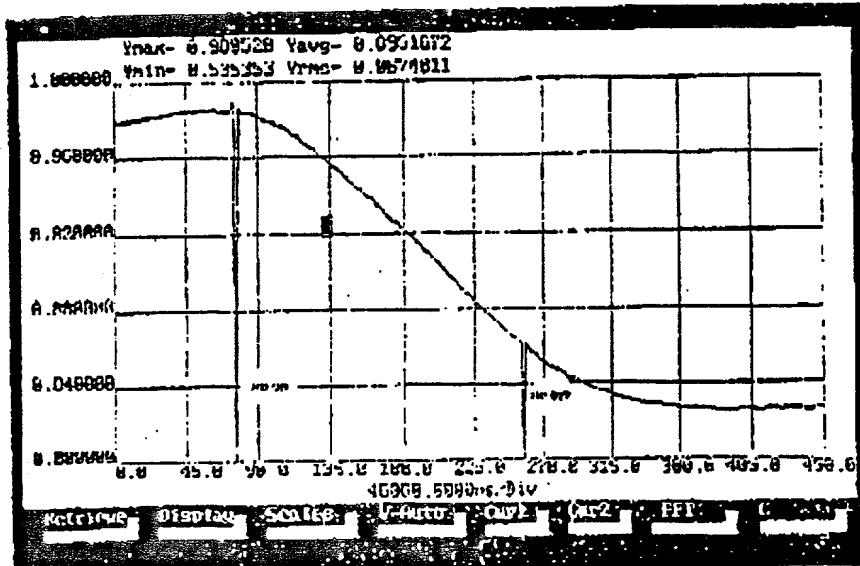


FIG. 9 B

Null Response of Nile
Blue/PECH Film of
Higher Sa Upon
Exposure to GD at 166
ppb

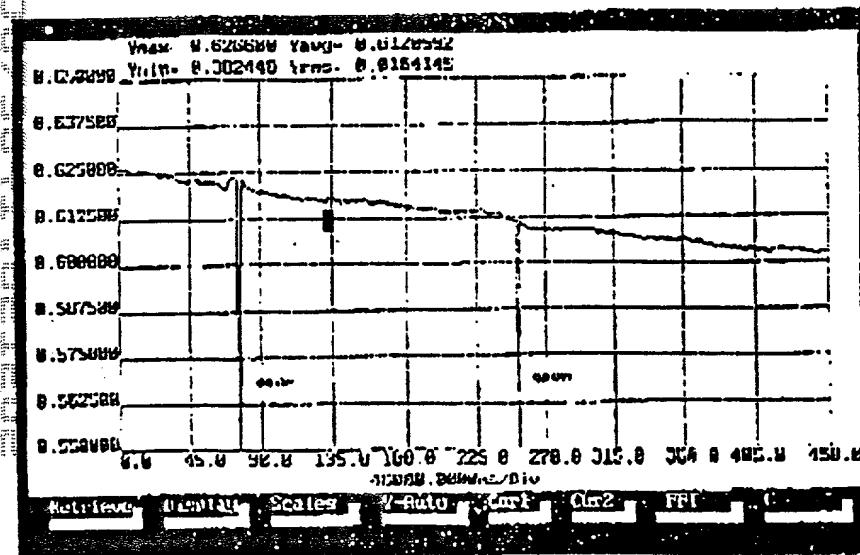
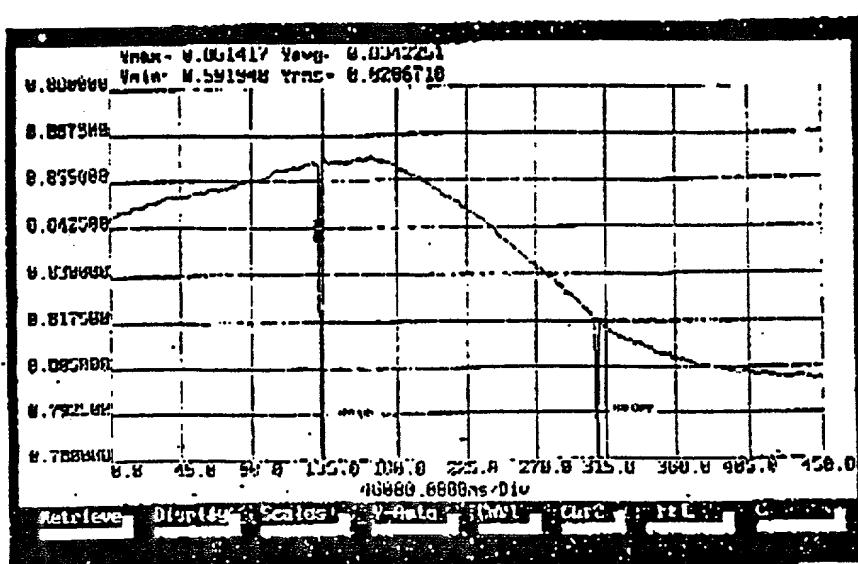
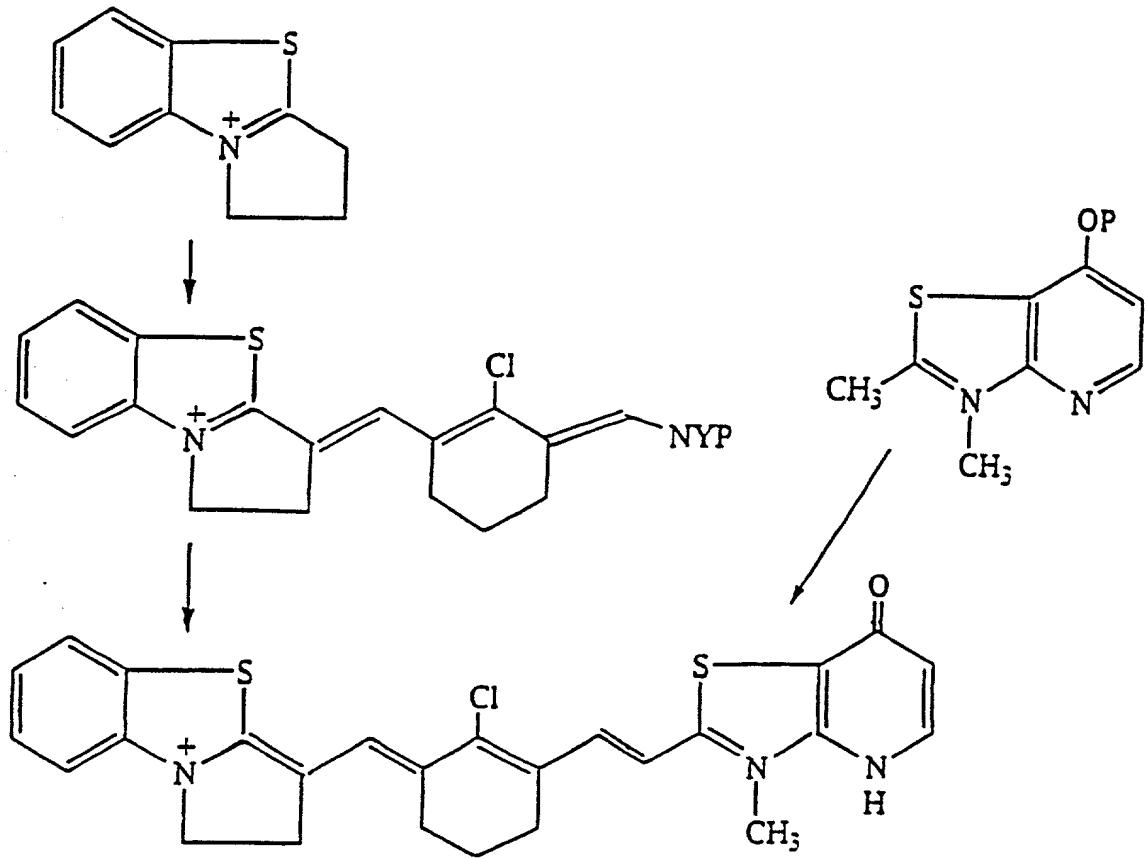


FIG. 9 C

Response of Same Nile
Blue/PECH Film, After
Exposure to GD (at 166
ppb) Upon Re-exposure
to HD (at 243 ppb)

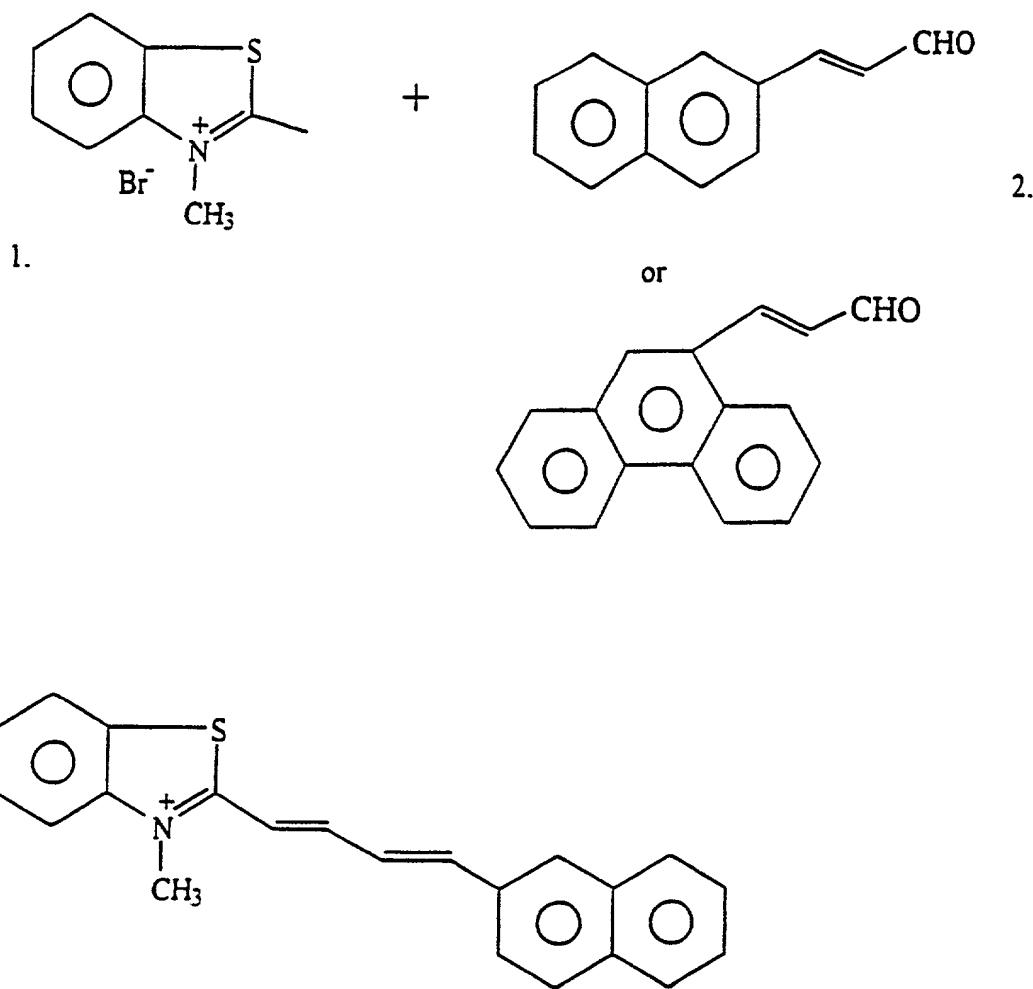


Response of Nile Blue/PECH Film to 300 ppb HD before and after exposure to GD



(Scheme I) Synthesis of Near-Infrared Excited Solvatochromic Fluorophore

FIG. 10



1. DMF @ 150°C for 12 hours
2. $(C_2H_5)_3N$ in EtOH

(Scheme II) Synthesis of Aryl Near-Infrared Excited Solvatochromic Fluorophore

FIG. 11

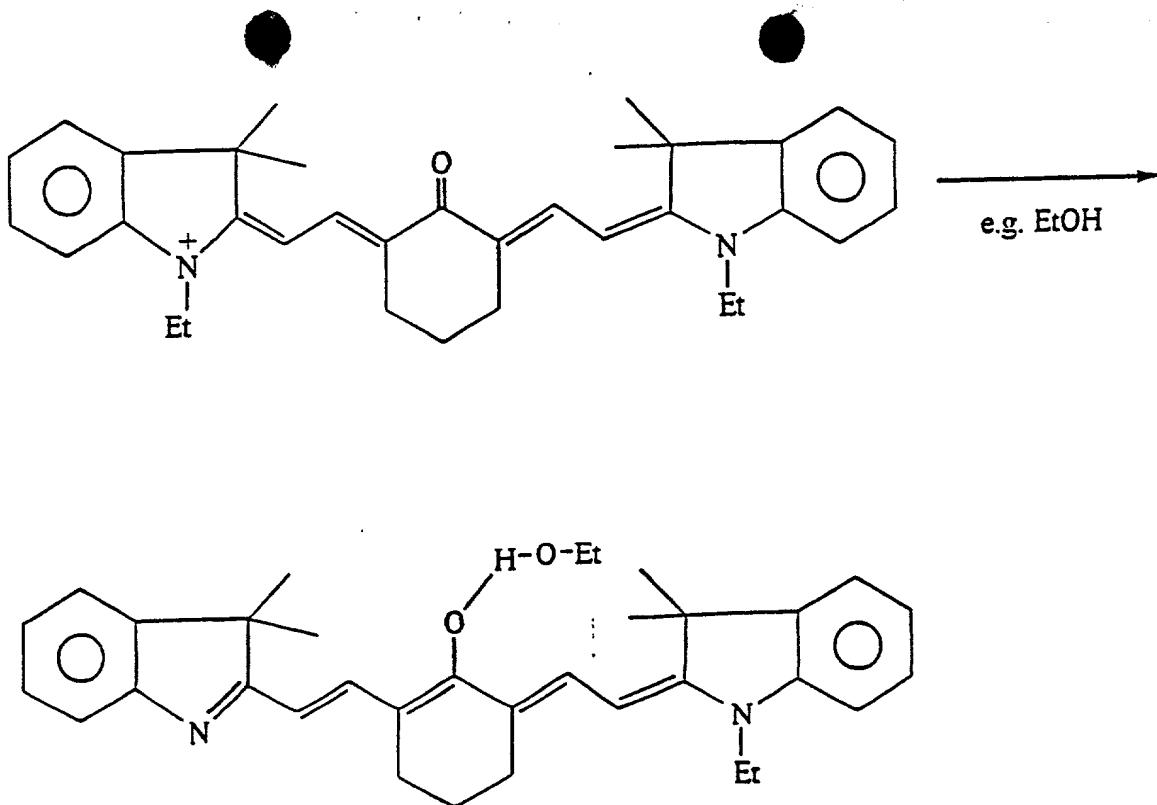
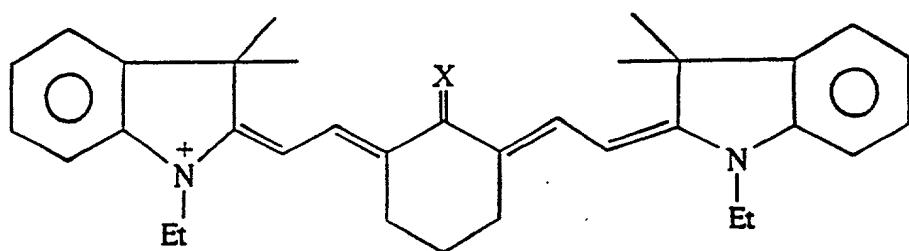


Illustration of Hydrogen Bonding to Keto-Enol Structures

FIG. 12



$\text{X} = \text{S, NH, etc.}$

FIG. 13